

Abstract

Wing of aircraft with slats (1) and segmented one-slotted sliding flaps which each consists of placed in wing chamber two movable segments: fore box and main flap connected by spring actuators to each other and moving on rolls along curved guides this way, that fore box is situated in each of its positions at least partially within the chamber, and the main flap is situated in its various positions at least partially within the chamber or fully beyond it, at the same time wing chamber composes a sector of cylinder ring with thickness limited by both a tangent to wing box surface at its top rear point and closing panel, situated at the bottom of this box, is characterized by fore box (2) which has got outline with both upper and bottom lines strictly fitting to shape of chamber (7), at the same time from aft spar of wing direction this outline is open so, that it comprises all elements of driving gear of flap, whereas guides (6), built as single C-shaped rails and immovably attached to wing, are formed by means forcing mutual position of fore box (2) and main flap (3) in each phase of their movement, in such a way, that during protruding of the wing flap, increase of both extension and camber of the wing airfoil follows in continuous way, and rear wall of fore box (2) composes with attack surface of main flap (3) a continuously changing slot, convergent in aft edge of wing direction.

Radius (R) of curvature of guides (6) is bigger than a half chord (c) of wing airfoil section and at the same time smaller than chord (c) of wing airfoil section and considerably decreases on their end.

Driving gear of each flap is completely located along wing span behind aft spar of the wing box and fixed on rear plane (10) of wing box (8), perpendicular to airfoil section chord (c).

Driving gear of each flap is equipped with pusher (11), connected on one end with main flap ferrule (12), and on other one with trolley (13) sliding along guide (14) on screw (15) powered through Cardan joint (16), by hydraulic engine (17) with transmission gear (18).